

LEST WE FORGET – UNIT VII – GENETICS AND EVOLUTION

1. Dominance is not an autonomous feature of a gene or the product that it has information for.
2. In dihybrid cross, heterozygous round seed shape / yellow seed colour peas plants inter-crossed, the yellow and green colour and round and wrinkled seed shape each segregated in a 3: 1 ratio.
3. The two alleles of a gene pair are located on homologous sites on homologous chromosomes.
4. The underlying mechanism of pleiotropy in most cases is the effect of a gene on metabolic pathways which contribute towards different phenotypes.
5. Male honeybees do not have father and thus cannot have sons, but have a grandfather and can have grandsons.
6. Control crosses are not possible in humans – pedigree analysis is an alternative.
7. Thalassemia is a quantitative problem, sickle cell anaemia is a qualitative problem.
8. Two nucleotide are linked through 3'-5' phosphodiester linkage to form a dinucleotide.
9. Euchromatin is transcriptionally active chromatin, whereas heterochromatin is inactive.
10. Griffith did not define the biochemical nature of genetic material.
11. The genetic material of QB bacteriophage is RNA.
12. The protein synthesising machinery has evolved around RNA.
13. RNA was the first genetic material.
14. ^{15}N is not a radioactive isotope.
15. Taylor proved that DNA in chromosomes also replicate semi-conservatively.
16. It is because of the requirement of the ori that a piece of DNA if needed to be propagated during recombinant DNA procedures, requires a vector.
17. All the reference point while defining a transcription unit is made with the coding strand.
18. Inheritance of a character is also affected by promoter and regulatory sequences of a structural gene.

19. Transcription and translation can be coupled in bacterial cells.
20. Process of splicing shows the dominance of RNA world.
21. Severo Ochoa enzyme [polynucleotide phosphorylase] is involved in enzymatic synthesis of RNA.
22. Amino 23srRNA is a ribozyme and part of 50 S subunit of ribosome.
23. Lac operon is under control of positive regulation as well.
24. Polymorphism in DNA is the basis of genetic mapping of human genome as well as DNA fingerprinting.
25. DNA polymorphism is present if more than allele at a locus occurs in human population with a frequency greater than 0.01.
26. The size of VNTR varies between 0.1 to 20 kb.
27. Von Baer observed that embryos never pass through the adult stages of other animals.
28. Remember, in Industrial Melanism, none of the variant was is completely wiped out.
29. Evolution is a stochastic process based on chance events in nature and chance mutations in the organisms.
30. when more than one adaptive radiation appeared to have occurred in an isolated geographical area [representing different habitats], one can call this convergent evolution.
31. Evolution for Darwin was gradual while de Vries believed mutations caused speciation.
32. Lobefins evolved into the first amphibians.
33. Thecodonts were ancestors to crocodiles, dinosaurs and birds.
34. Therapsids were ancestors to mammals.
35. Some mammals live wholly in water.
36. Agriculture came around 10000 years back.